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## Meet ASTRABAT: a chat with NANOMAKERS



*Discover about the work carried out for ASTRABAT by Dr Yohan Oudart and his team at NANOMAKERS, focused on the development of a silicon-based material to boost the density of ASTRABAT's new solid-state battery.*

Dr Yohan Oudart is R&D manager at Nanomakers, where he is working on various activities, from the production process to battery applications. Other fields of interest are the development of new applications for semi-conductor grade nano silicon carbide.

### **First, could you explain the role of your team in ASTRABAT and its relevance within the project?**

Nanomakers is a French company manufacturing high performance silicon nanoparticles for Li-ion batteries. In ASTRABAT, our R&D team prepares the active anode material with the aim of boosting the overall battery density. For this purpose, we tailor a specific silicon-based material for the ASTRABAT battery chemistry.

### **What type of expertise does your team bring to reach this objective?**

We have a strong background in the design and fabrication of various silicon-based materials and how to optimize their interaction with the other components of the battery. These materials integrate Nanomakers' nanometric particles, which are unique for their narrow particle size distribution. Within ASTRABAT, compatibility with the electrolyte is key: therefore, several materials have been prepared to determine the most suitable one.



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**Could you give us more details about the research work that you are carrying out in ASTRABAT?**

Silicon nanoparticles have very high storage capacities and carbon materials have a very stable cyclability: at Nanomakers we are creating synergies between both materials to design a new one with the benefits of each. The resulting material, a powder which has a well-controlled size and surface, will be incorporated in the ASTRABAT battery anode.

**What is the most innovative aspect of your work?**

ASTRABAT's formulation is unique. For high performances, all the materials must be developed in parallel and adapted to each other. ASTRABAT's electrolyte is innovative and Nanomakers is supplying a tailored and unique material optimized to work with this electrolyte.

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